6-18-2013

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DIFFERENTIAL EFFECT OF E-BANKING SERVICES DETERMINANTS

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Abstract

This study proposes and empirically tests a research model regarding the use of electronic financial services based on the e-service acceptance model. The current study categorizes electronic financial services provided by banks into transaction-oriented services (TOS) and communication-oriented services (COS), in order to investigate the co-value creation phenomenon through customer participation. It is assumed that the antecedent variables in the previous studies may exert differential effects on the use behaviour of electronic services. The proposed model includes three Technology Readiness dimensions (discomfort, optimism, and insecurity), and two Technology acceptance constructs (perceived ease of use, perceived usefulness), as the antecedents to use of e-banking services. The proposed research model was tested against the data collected through a survey of service users who have experience with both TOS use and COS use.

The key result is that the use behaviour of the different types of e-banking services is affected by different sets of factors: the use of TOS is found to be affected by perceived ease of use, perceived usefulness, and insecurity; whereas the use of COS is affected only by perceived ease of use.

Keywords: e-banking service use, transaction-oriented services, communication-oriented services, service value network, technology acceptance model, technology readiness.
1 INTRODUCTION

As the importance of electronic businesses increases, there has also been an increase in the number of studies that have investigated the questions, including why people shop at Internet websites (Davis, Bagozzi, & Warshaw, 1992; Eastin & LaRose, 2000; Garrity, Glassberg, Kim, Sanders, & Shin, 2005; Hsu & Chiu, 2004; Jarvenpaa, Tractinsky, & Saarinen, 1999; Michel, Brown, & Gallan, 2008; Moon & Kim, 2001; Pavlou, 2003), what are the major reasons why people use a website (Eastin & LaRose, 2000; Hsu & Chiu, 2004; Michel et al., 2008), and what are the key factors that makes a website usable (Garrity et al., 2005; Jarvenpaa et al., 1999; Pavlou, 2003). The core finding of the previous studies is that people intend to use a technology when it is both useful and easy to use (Davis, Bagozzi, & Warshaw, 1989; Davis et al., 1992; Hsu & Chiu, 2004; Igbaria, Iivari, & Maragahh, 1995; Moon & Kim, 2001). Previous studies explain why people accept e-business websites. However, from a service standpoint, a website consists of a variety of functions to support customer activities, including transactions between customers and a company, as well as communications among customers. In the case of website use, although the technology embodies the service so that the technology can be taken for the service, it is necessary to explicitly measure service use. However, previous studies are focused on the technology use side, rather than service use. In this study, we categorize the e-business service use into transaction-oriented service use and communication-oriented service use. It is important to understand what factors have a more significant effect on transaction service use and what factors influence communication service use. Through this understanding, companies can motivate customers to participate more in the interaction with websites and/or companies, so that both customers and companies can co-create value (Araujo & Spring, 2006; Basole & Rouse, 2008; Sawhney, 2006; Vargo & Lusch, 2008). The purpose of this study is to investigate the factors that influence use of the two types of e-banking service, namely transaction-oriented service and communication-oriented service. The factors include TR (Technology Readiness) and TAM (Technology Acceptance Model). The reason why TR is included is because e-banking services are embedded in technology and thus the readiness of customers to use a specific technology is critical in leading to the actual use of the technology.

2 THEORETICAL BACKGROUND

2.1 Technology Readiness (TR)

Technology readiness of customers is important for the success of a company. TR is an overall state of mind resulting from a gestalt of mental enablers and inhibitors that collectively determine a person’s predisposition to use new technologies (Burke, 2002; Parasuraman, 2000). That is, TR is defined as “people’s propensity to embrace and use new technologies for accomplishing goals in home life and at work” (Parasuraman, 2000). TR is focused on the disposition of the using technology rather than the confidence to use this technology (Erdoğmuş & Esen, 2011). Parasuraman (2000) suggests that that individual can either have negative or positive feelings towards technology. Therefore, TR is necessary in order to understand how and why people adopt new technology. TR consists of four categories of belief toward technology: optimism, innovativeness, discomfort, and insecurity (Parasuraman, 2000). Technology Readiness Index (TRI) measures an individual’s readiness to use new technology, with four personality traits above discussed. Optimism and innovativeness are drivers of TR, while discomfort and insecurity are its inhibitors. According to Parasuraman (2000), a person with optimism, innovativeness, little discomfort, and insecurity, is more likely to use a new technology.

2.2 Technology Acceptance (TAM)

Technology Acceptance Model (TAM) explains the individual’s acceptance behavior of information technology based on the Theory of Reasoned Action(Davis et al., 1989). TAM posits that perceived usefulness and perceived ease of use are salient in computer use behaviors (Ajzen & Fishbein, 1980;
Davis et al., 1989). Davis (1989) defines perceived usefulness as “the prospective user's subjective probability that using a specific application system will increase his or her job performance within an organizational context,” and Perceived ease of use (EOU) as “the degree to which the prospective user expects the target system to be free of effort”. To our understanding, most Internet-related technologies can be categorized as self-servicing technology that requires strong self-efficacy to be accepted and actually used (Compeau, Higgins, & Huff, 1999; Eastin & LaRose, 2000; Hsu & Chiu, 2004). Moreover, previous studies on technology acceptance considered technology as a monolithic entity. However, information technologies, in the e-service context, can have two totally different dimensions: one for supporting transaction, the other for communication. We need to deal with this issue in the model to explain the use behavior of e-services.

2.3 Service Value Network and e-Banking Services in Practice

Basole and Rouse (2008) suggest a conceptual model of service ecosystems that is the network of both products and services. They use nodes and arcs to describe the service value network. The arcs represent interactions or relationships, while the nodes represent participants, including individuals or organizations in the service network (Basole & Rouse, 2008; Batten, Casti, & Thord, 1995). In their model, a service network consists of five types of actors: service providers, service consumers, tier 1 and tier 2 enablers, and auxiliary enablers. These actors exist in four contexts that determine the structure: political, economic, technology, and social (Basole & Rouse, 2008). Consumers are the users of services who realize the proposed values. To acquire the service needed, consumers first contact service providers (Basole & Rouse, 2008). Service providers deliver various services such as education, hospitality, wholesale, transportation and logistics, utilities, financial service, information technology (IT), telecommunications, health care, and so on. In this network of service provision, values are co-produced through the interaction between service providers and consumers (Basole & Rouse, 2008; Parolini, 1999; Prahalad & Ramaswamy, 2000). Tier 1 and Tier 2 enablers support service providers to produce and supply the service. Auxiliary enablers provide the entire system with necessary infrastructure, and is not limited to a specific industry. The entire service system operates within the context of society, culture, economy, and politics (Basole & Rouse, 2008).

In this study, we try to understand the e-banking service network (Figure 1). To identify how the e-banking service is structured, we examined services provided through Internet banking web sites, and looked at six major banks in Korea. The Internet banking websites that were investigated contain most of general banking service functions provided off-line including balance checking, money transfer, and some extended financial services, such as credit card service, insurance, foreign exchange, investment, stock exchange, and financial counseling. These services constitute the major part of transaction-oriented services between a bank and a customer. Also, they contain various pieces of information related to transactions. With regard to the transactional service provision, the bank becomes a focal point to access diverse financial services, which in turn dramatically reduces the sheer amount of complexity to a single interface for the sake of customer convenience (Basole & Rouse, 2008). In Figure 1, the left hand side of bank represents the transactional e-banking services. Internet banking provides an effective and efficient user interface through which consumers can conduct a set of financial activities such as financial planning, advising, investment decision making, and stock trading. The interface also allows service providers to reach individual consumers with better offerings and enjoy better outcomes, which will lead to both cost reduction and sales increase. The right hand side of Figure 1 illustrates consumer communities as another important component of the e-banking service network. In this paper, we define activities in consumer communities as communication oriented e-service use.
In sum, e-banking service can be categorized into transaction-oriented services (TOS), where customers and companies interact with each other, and communication-oriented services (COS), where customers talk to each other to get information and knowledge about financial transactions. For both cases, e-banking websites become service platforms that allow customers to access necessary e-banking services, and allow banks and partners to deliver diverse services. Service providers that use the service platforms can reduce cost for service provision and increase relevance of service provision to individual customers. Customers can also enjoy more information on providers’ performance and financial knowledge from peer customers, as well as a variety of financial services.

3 RESEARCH MODEL AND HYPOTHESIS

The proposed research model in this study is an extension of the TR and TAM (Davis et al., 1989; Parasuraman, 2000). Lin et al. (2007) asserts that TR and TAM are interrelated, although TR is for general beliefs about technology, while TAM is for specific beliefs about a particular technology. In our research model, we focus on the effect of TR factors (optimism, discomfort, insecurity) as general beliefs about technology, and on TAM factors (perceived ease of use, and perceived usefulness) as domain specific beliefs for e-banking services which in turn affect use behavior. According to Liljander et al. (2006), TR has a positive effect on the attitude toward using self-service technology and the intention to use it. Specifically, when individuals use a technology, they evaluate the general characteristics of the technology first, and then move down to more specific aspect of the technology such as perceived usefulness and ease of use (Erdoğan & Esen, 2011; Lin, Shih, & Sher, 2007; Walczuch, Lemmink, & Streukens, 2007). This is primarily because user’s general beliefs about technology may become an anchor for more specific beliefs of usefulness and ease of use (Lin et al., 2007). In the model, we include use behavior as the dependent variable, instead of intention to use a technology. It is believed that the use behavior is a better indicator of information technology use (Compeau et al., 1999; Eastin & LaRose, 2000; Hsu & Chiu, 2004; Igbaria et al., 1995; Mathieson, 1991; Moon & Kim, 2001). As discussed in the earlier sections, e-banking services consist of two distinguishable categories of services: transaction-oriented (TOS) and communication-oriented (COS).

3.1 TR Dimensions and TAM Dimensions

Discomfort is defined as “a perceived lack of control over technology and a feeling of being overwhelmed by it” (Parasuraman, 2000). Discomfort can be reduced through informative feedback and augmented ease of use (Dabholkar, 1996; Walczuch et al., 2007). It is similar to technology anxiety, which has a negative effect on adoption and usage behavior of technology based service (Liljander et al., 2006; Meuter, Ostrom, Bitner, & Roundtree, 2003). People who have high level of discomfort toward new technologies tend to find technology less easy to use (Walczuch et al., 2007). Similarly, discomfort may have negative effect on perceived usefulness, because it is an inhibitor of using new technologies (Parasuraman, 2000; Walczuch et al., 2007). Optimism is defined as “a positive view of technology and a belief that it offers people increased control, flexibility, and efficiency in their lives” (Parasuraman, 2000). Optimism is the predetermined positive view of using a new technology, ahead of use experience (Liljander et al., 2006). Optimism is important for people to feel confident in controlling technologies and accepting new technologies (Bateson, 2000; Parasuraman, 2000). Hence, it can be assumed that if one feels optimistic about a technology, she may perceive the technology as easy to use and useful (Parasuraman, 2000). Insecurity is defined as “distrust of technology and skepticism about its ability to work properly” (Parasuraman, 2000), which make an individual avoid using computers due to fear of technology (Walczuch et al., 2007). Insecurity is caused by lack of confidence in the security of new technology and the need for assurance (Parasuraman & Colby, 2001; Walczuch et al., 2007). Walczuch et al. (2007) argue that high level of insecurity would have lower level of perceived ease of use, and security suspicions reduce perceived usefulness.

Previous studies argue that security and privacy concern function as obstacles to technology acceptance (Chen, Gillenson, & Sherrell, 2002), and insecurity is negatively related to adoption of e-commerce (Hoffman, Novak, & Peralta, 1999). Insecurity relates to users’ perception about performance failure,
which refers to the possibility of wasting time caused by unsuccessful accomplishment and potential monetary loss (Liljander et al., 2006). Hence, insecurity as users’ perception about the failure possibilities and security risk of e-service use will negatively affect e-banking service use behavior.

Hypothesis 1–a: Discomfort about technology has a negative effect on perceived ease of use.
Hypothesis 1–a: Discomfort about technology has a negative effect on perceived usefulness.
Hypothesis 2–a: Optimism about technology has a positive effect on perceived ease of use.
Hypothesis 2–b: Optimism about technology has a positive effect on perceived usefulness.
Hypothesis 3–a: Insecurity about technology has a negative effect on perceived ease of use.
Hypothesis 3–b: Insecurity about technology has a negative effect on perceived usefulness.
Hypothesis 7–a: Insecurity about technology has a negative effect on TOS use.
Hypothesis 7–b: Insecurity about technology has a negative effect on COS use.

3.2 Beliefs about technology use and use behavior

TAM posits that user acceptance of a new system is determined by beliefs about specific system use of the ease of use and usefulness (Davis et al., 1989; Lin et al., 2007; Venkatesh et al., 2003). TAM has been empirically tested and extended in various researches (Davis et al., 1989; Eastin, 2002; Garrity et al., 2005; Gefen & Straub, 1997; Moon & Kim, 2001; Pavlou, 2003). Previous studies have confirmed that factors such as perceived ease of use and perceived usefulness have positive effects on behavioral intention and subsequently use behaviors (Liljander et al., 2006; Lin et al., 2007; Walczuch et al., 2007). These studies, however, consider technology use as a monolithic construct. In this study, we separate communication-oriented service use from transaction-oriented service use, and hypothesize the relationship among the variables as such. Perceived ease of use is defined as “the degree to which the prospective user expects the target system to be free of effort” (Davis et al., 1989). Previous studies provide strong evidence about the effect of perceived ease of use on perceived usefulness and technology acceptance (Davis et al., 1989, 1992; Igbaria et al., 1995; Moon & Kim, 2001; Rai et al., 2006). It is assumed in this study that perceived ease of use will positively influence use of both communication-oriented and transaction-oriented services, because users want to put less effort on using a technology and prefer ones that are easier to use. Perceived usefulness is defined as “the degree to which a person believes that using a particular system would enhance his or her job performance” (Davis et al., 1989). Prior research shows that perceived usefulness positively influences use behavior (Davis et al., 1989, 1992; Moon & Kim, 2001). In this study, we also argue that perceived usefulness as users’ expectation to get better outcome, which positively affects e-banking services use.

Hypothesis 4: Perceived ease of use has a positive effect on perceived usefulness.
Hypothesis 5–a: Perceived ease of use has a positive effect on COS use.
Hypothesis 5–b: Perceived ease of use has a positive effect on TOS use.
Hypothesis 6–a: Perceived usefulness has a positive effect on COS use.
Hypothesis 6–b: Perceived usefulness has a positive effect on TOS use.

4 RESEARCH METHODOLOGY

4.1 Data Collection

The proposed research model was tested against the data collected, through the survey method. The sample frame comprises e-banking users who are paid monthly salary as a full-time employee. Respondents are also expected to use e-banking service regularly and participate in online communities. About 400 surveys were distributed via e-mail or directly delivered to respondents; 231 questionnaires of which were returned. Among the returned questionnaires, 225 were useable responses. The unit of analysis is the individual user of e-banking services. 58.7% of the respondents are male, whereas 41.3% are male. Table 1 summarizes the demographic profile of the informants.
4.2 Operationalization of Research Variables

Table 2 shows the measurement items used to operationalize research constructs. 26 measurement items included in the survey questionnaire were drawn from previous studies on Technology Readiness Index and Technology Acceptance Model (Davis et al., 1989; Parasuraman, 2000; Venkatesh et al., 2003). Four items for communication-oriented service use were created based on the measurement items for transaction-oriented service use, because there were no explicitly used items to measure it. For all measurement items, a 5 point Likert scale was used, with anchors ranging from strongly disagree (1) to strongly agree (5).

<table>
<thead>
<tr>
<th>Age</th>
<th>Annual Income ($, 1$=$1,000 KW)</th>
</tr>
</thead>
<tbody>
<tr>
<td>under 25</td>
<td></td>
</tr>
<tr>
<td>25-35</td>
<td></td>
</tr>
<tr>
<td>35-45</td>
<td></td>
</tr>
<tr>
<td>above 45</td>
<td></td>
</tr>
<tr>
<td>under 1 years</td>
<td>16</td>
</tr>
<tr>
<td>1-2 years</td>
<td>58</td>
</tr>
<tr>
<td>2-3 years</td>
<td>46</td>
</tr>
</tbody>
</table>

Table 1 Demographics (n=225)

<table>
<thead>
<tr>
<th>Factors and Measurement Items</th>
<th>β</th>
<th>Mean</th>
<th>S Dev</th>
</tr>
</thead>
<tbody>
<tr>
<td>Discomfort (R) (Parasuraman, 2000)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sometimes, I think that technology systems are not designed for use by ordinary people. (Davis et al., 1989; Parasuraman, 2000)</td>
<td>0.684</td>
<td>3.67</td>
<td>0.99</td>
</tr>
<tr>
<td>If I buy a high-tech product or service, I prefer to have the basic model over one with a lot of extra features (Davis et al., 1989; Parasuraman, 2000)</td>
<td>0.770</td>
<td>3.40</td>
<td>0.92</td>
</tr>
<tr>
<td>It is embarrassing when you have trouble with a high-tech products while people are watching (Davis et al., 1989; Parasuraman, 2000)</td>
<td>0.674</td>
<td>3.20</td>
<td>1.28</td>
</tr>
<tr>
<td>Optimism (Parasuraman, 2000)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Technology gives people more control over their daily lives (Davis et al., 1989; Parasuraman, 2000)</td>
<td>0.671</td>
<td>4.19</td>
<td>0.88</td>
</tr>
<tr>
<td>You like computer programs that allow you to tailor things to fit your own needs (Davis et al., 1989; Parasuraman, 2000)</td>
<td>0.637</td>
<td>4.40</td>
<td>0.83</td>
</tr>
<tr>
<td>Technology makes you more efficient in your occupation (Davis et al., 1989; Parasuraman, 2000)</td>
<td>0.879</td>
<td>4.50</td>
<td>0.76</td>
</tr>
<tr>
<td>You feel confident that machines will follow through with what you instructed them to do (Davis et al., 1989; Parasuraman, 2000)</td>
<td>0.648</td>
<td>4.48</td>
<td>0.76</td>
</tr>
<tr>
<td>Insecurity (R) (Parasuraman, 2000)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>You worry that information you send over the Internet will be seen by other people (Davis et al., 1989; Parasuraman, 2000)</td>
<td>0.781</td>
<td>3.48</td>
<td>1.02</td>
</tr>
<tr>
<td>You do not feel confident doing business with a place that can only be reached online (Davis et al., 1989; Parasuraman, 2000)</td>
<td>0.701</td>
<td>3.89</td>
<td>0.89</td>
</tr>
<tr>
<td>Any business transaction you do electronically should be confirmed later with something in writing (Davis et al., 1989; Parasuraman, 2000)</td>
<td>0.682</td>
<td>3.18</td>
<td>1.05</td>
</tr>
<tr>
<td>Perceived Ease of Use (Davis et al., 1989; Venkatesh et al., 2003)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I believe that it is easy to get the system to do what I want it to do (Davis et al., 1989; Venkatesh et al., 2003)</td>
<td>0.657</td>
<td>3.61</td>
<td>0.95</td>
</tr>
<tr>
<td>It would be easy to become skilful at doing what I want to in the e-banking web site (Davis et al., 1989; Venkatesh et al., 2003)</td>
<td>0.810</td>
<td>4.04</td>
<td>0.85</td>
</tr>
<tr>
<td>I would find that it is easy to do(get) financial activities in the e-banking web site (Davis et al., 1989; Venkatesh et al., 2003)</td>
<td>0.684</td>
<td>3.51</td>
<td>0.86</td>
</tr>
<tr>
<td>Perceived Usefulness (Davis et al., 1989; Venkatesh et al., 2003)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>e-banking if effective interface to improve my productivity in the financial activities (Davis et al., 1989; Venkatesh et al., 2003)</td>
<td>0.764</td>
<td>4.02</td>
<td>0.72</td>
</tr>
<tr>
<td>e-banking if effective interface to make ease to do financial activities for me (Davis et al., 1989; Venkatesh et al., 2003)</td>
<td>0.696</td>
<td>3.76</td>
<td>0.73</td>
</tr>
<tr>
<td>e-banking if effective interface to save time for accomplish task (Davis et al., 1989; Venkatesh et al., 2003)</td>
<td>0.681</td>
<td>4.32</td>
<td>0.70</td>
</tr>
<tr>
<td>I would find the e-banking service useful in my financial planning (Davis et al., 1989; Venkatesh et al., 2003)</td>
<td>0.691</td>
<td>4.06</td>
<td>0.68</td>
</tr>
<tr>
<td>Communication-Oriented e-Service Use (Davis et al., 1989; Venkatesh et al., 2003)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I visit the financial community quite often. (Davis et al., 1989; Venkatesh et al., 2003)</td>
<td>0.802</td>
<td>3.84</td>
<td>0.92</td>
</tr>
<tr>
<td>I spend a lot of time on the financial community. (Davis et al., 1989; Venkatesh et al., 2003)</td>
<td>0.803</td>
<td>4.10</td>
<td>0.80</td>
</tr>
<tr>
<td>I have been using the financial community for a very long time now (Davis et al., 1989; Venkatesh et al., 2003)</td>
<td>0.724</td>
<td>4.12</td>
<td>0.95</td>
</tr>
<tr>
<td>I’m getting diverse financial issues and sharing information (Davis et al., 1989; Venkatesh et al., 2003)</td>
<td>0.661</td>
<td>3.56</td>
<td>1.09</td>
</tr>
<tr>
<td>I’m interested in diverse financial issues and sharing information (Davis et al., 1989; Venkatesh et al., 2003)</td>
<td>0.601</td>
<td>3.99</td>
<td>1.08</td>
</tr>
<tr>
<td>Transaction-Oriented e-Service Use (Davis et al., 1989; Venkatesh et al., 2003)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I use the e-banking quite often for personal use (Davis et al., 1989; Venkatesh et al., 2003)</td>
<td>0.809</td>
<td>3.36</td>
<td>1.06</td>
</tr>
<tr>
<td>I spend a lot of time on the e-banking website for financial use (Davis et al., 1989; Venkatesh et al., 2003)</td>
<td>0.696</td>
<td>3.00</td>
<td>1.01</td>
</tr>
<tr>
<td>I have been using the e-banking website for financial use for a very long time now (Davis et al., 1989; Venkatesh et al., 2003)</td>
<td>0.693</td>
<td>3.38</td>
<td>0.85</td>
</tr>
<tr>
<td>I would use diverse financial services that e-banking sites provide (Davis et al., 1989; Venkatesh et al., 2003)</td>
<td>0.597</td>
<td>2.94</td>
<td>0.94</td>
</tr>
</tbody>
</table>

(R) indicates constructs treated with reverse scored measurement items
5 ANALYSIS AND RESULTS

5.1 Reliability and Validity Tests

Reliability of the constructs was tested with confirmatory factor analysis. Cronbach’s alpha, composite reliability (CR), and average variance extracted (AVE) were computed (Table 3). Cronbach’s alpha is the measure of internal consistency (Cronbach, 1951). In our study, alpha coefficients were ranged from 0.718 (Discomfort) to 0.819 (Transaction Oriented Service Use), which are greater than 0.7 - the cut-off for confirmatory research (Gefen, Straub, & Boudreau, 2000; Nunnally, 1967). Results from the test indicates that all of composite reliabilities, except PEOU, were over 0.7 (Gefen et al., 2000). Table 3 shows that the AVE values of each construct were over 0.5. Each of square roots of AVE is greater than diagonal correlation values, which indicates that the measurement model has a sound convergent and discriminant validity.

<table>
<thead>
<tr>
<th>Construct</th>
<th>Alpha</th>
<th>CR</th>
<th>AVE</th>
<th>Discomfort</th>
<th>Optimism</th>
<th>Insecurity</th>
<th>PEOU</th>
<th>PU</th>
<th>TOS</th>
<th>COS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Discomfort</td>
<td>0.718</td>
<td>0.829</td>
<td>0.505</td>
<td>(.711)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Optimism</td>
<td>0.796</td>
<td>0.808</td>
<td>0.512</td>
<td>-.037</td>
<td>(.716)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Insecurity</td>
<td>0.727</td>
<td>0.756</td>
<td>0.508</td>
<td>.019</td>
<td>.030</td>
<td>(.713)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PEOU</td>
<td>0.738</td>
<td>0.692</td>
<td>0.518</td>
<td>.180</td>
<td>.309</td>
<td>-.023</td>
<td>(.720)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PU</td>
<td>0.735</td>
<td>0.841</td>
<td>0.502</td>
<td>.163</td>
<td>.272</td>
<td>.101</td>
<td>.556</td>
<td>.709</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOS</td>
<td>0.819</td>
<td>0.724</td>
<td>0.512</td>
<td>.163</td>
<td>.667</td>
<td>-.014</td>
<td>.264</td>
<td>.205</td>
<td>.723</td>
<td></td>
</tr>
<tr>
<td>COS</td>
<td>0.804</td>
<td>0.828</td>
<td>0.522</td>
<td>.387</td>
<td>.102</td>
<td>.149</td>
<td>.260</td>
<td>.249</td>
<td>.166</td>
<td>.715</td>
</tr>
</tbody>
</table>

*The number parentheses is the square root of AVE

Table 3 Composite Reliability (CR), Average Variance Extracted (AVE), and Correlations of Constructs

5.2 Assessment of the structural model

The hypothesized relationships were tested using AMOS, which is a structural equation modelling method. Figure 4 represents the results of the structural model, with non-significant path as dotted lines, and the standardized path coefficients between constructs. The Model Fit indices for the structural model appear to be satisfactory. Ease of use has significant influence on perceived usefulness (β =0.435, p<0.05) and Optimism (β =0.338, p<0.01). Perceived ease of use has significant influence on perceived usefulness (β =0.357, p<0.01), communication oriented service use (β =0.826, p<0.05) and transaction oriented service use (β =0.258, p<0.05). Perceived usefulness and communication oriented service use are influenced by perceived ease of use. Transaction oriented service use is significantly influenced by perceived ease of use, perceived usefulness and insecurity (β =0.331, p<0.05). As a result, hypotheses 1-a, 2-a, 4, 5-a, 5-b, 6-b, 7-b are supported, whereas Hypotheses 1-b, 2-b, 3-a, 3-b, 6-a, 7-a are not supported.

6 DISCUSSION AND IMPLICATIONS

In this study, we found that TR dimensions such as discomfort, optimism and insecurity have a significant influence on domain specific beliefs and use behavior. Previous studies argue that general beliefs about technology influence the adoption and attitude toward technology use, in different contexts and services (Erdoğmuş & Esen, 2011; Liljander et al., 2006; Lin et al., 2007; Walczuch et al., 2007). Our findings confirmed that TR dimensions are the determinants of attitude and use behavior of e-banking services.
We also found that discomfort and optimism indirectly influence perceived usefulness and e-service use only through perceived ease of use. Prior literature suggests that TR dimensions are antecedents to perceived ease of use, perceived usefulness, attitude toward technology use, and use behavior. For example, Lin et al., (2007) proposed that the Technology Readiness and Acceptance Model, which treats TR dimensions as a single construct, affect both ease of use and usefulness so that it cannot explain differential influence of each of TR dimensions. The results of the current research study, on the contrary, explain that perceived ease of use is influenced directly by discomfort and optimism, whereas perceived usefulness is not. As in Venkatech (2003), the results of this study explain that general beliefs about technology play a role in building the perception of easiness of using technology, rather than directly affecting the usefulness belief.

The results of this study indicate that insecurity does not affect beliefs about technology use, but has a direct effect on transaction-oriented service use. Insecurity acts like perceived risk. In the context of e-banking service use, financial risk is related to the users’ potential fear of monetary loss, performance failure, and unsuccessful accomplishment, which keep people from using e-banking services (Kuisma, Laukkanen, & Hiltunen, 2007; Lee, 2009). Security risk is also a significant impediment to the use of e-banking (Sathye, 1999). In our research, transaction-oriented service is the primary service when it comes to e-banking services. It is not only strongly related to financial and security risk, but also naturally involved in the uncertainty of performance accomplishment. The results of this study confirm that insecurity has a significant negative effect on technology use behavior ( Featherman & Pavlou, 2003; Liljander et al., 2006; Sweeney, Soutar, & Johnson, 1999), in particular, in the context of transaction-oriented service use (Featherman & Pavlou, 2003; Lee, 2009). According to our results, communication-oriented service is not perceived to involve actual financial risks.

To summarize, the use of different e-banking services is influenced by different antecedents, due to the different nature of the services. Transaction-oriented service use is affected by perceived ease of use, perceived usefulness, and insecurity directly, while communication-oriented service use is influenced only by perceived ease of use. As discussed earlier, transaction-oriented service involves actual financial activities with risk and uncertainty. To perform financial transactions requires customers to have skills and knowledge about the transactions, of which outcomes customers are responsible for. Therefore e-banking service users need to consider easiness, usefulness, and resulting risk when they use transaction-oriented services. On the other hand, communication-oriented services are related to activities (e.g., information sharing, blog, etc.) that support financial transactions. When they join and participate in customer communities, customers may not worry much about the outcome quality itself. That is, even though they don’t have the knowledge and skill to use the Internet technologies, they can easily join the community and acquire knowledge from other customers. Thus, in the case of communication-oriented service use, financial risk and usefulness are not important concerns, but the ease of getting information and knowledge is crucial.

This study is expected to contribute to the literature in two ways. First, this study investigates the use behavior of e-banking services in quite a different way from the previous studies. We identify the type of e-banking services as transaction-oriented service and communication-oriented service, based on the nature of the services in creating values, which will then provide a basis for future study on e-services. That is, there are always two types of services when it comes to e-services to support customers, and these services have different characteristics in creating value. Second, we separate general beliefs about technology from domain specific beliefs such as perceived ease of use and perceived usefulness, so as to closely examine the effect of antecedents on different e-banking services. The findings indicate that general beliefs about technology influence both beliefs about technology use and use behavior. In addition, perceived ease of use is the most important factor that carries the impact of TR dimensions onto technology use beliefs and subsequently onto use behavior.

This study also has practical implications. First, this study gives some insight into the fact that different services need different support in promoting the use of the services. In the case of transaction-oriented service, the financial and security risks, ease of use, and usefulness need to be well taken care of. Additionally, in the case of communication-oriented services, ease of use needs to be carefully considered. As such, practitioners need to understand what kinds of e-services are affected by what kind of factors. Then they may come up with proper tools to facilitate the use of e-services they provide and understand how to design their e-services.
References


